



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/517,487

07/07/2005

Takahito Fukuda

HOK-0250

6127

74384

7590

04/01/2009

Cheng Law Group, PLLC
1100 17th Street, N.W.
Suite 503
Washington, DC 20036

EXAMINER

BRAY, STEPHEN A

ART UNIT

PAPER NUMBER

2629

MAIL DATE

DELIVERY MODE

04/01/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/517,487	Applicant(s) FUKUDA, TAKAHITO	
	Examiner STEPHEN A. BRAY	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/10/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2629

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-6, 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wendt et al (US 2002/0082498) in view of Jahn et al (US 2002/0089544).

Regarding claim 1, *Wendt et al* discloses an operation guiding system comprising:

a display unit configured to be positioned in front of an operator's eye for displaying the virtual images, in contrast to a real operation object in front of the operator (Figure 3 and paragraph [0028] disclose a head-mounted display unit which displays a virtual image in contrast to a real image in front of the user.);

a virtual image replay means configured to replay the virtual images on said display unit in order of the operation steps (Paragraph [0035] discloses a recording means 14 which can record the augmented view and then play it back at a later time.);

a virtual image adjusting means configured to adjust the virtual images such that a virtual operation object drawn on each of the virtual images and corresponding to the real operation object will have an overlapping relation with the real operation object on said display unit (Paragraphs [0028] and [0033]-[0037] disclose that a virtual image of the brain is superimposed over the actual image of the brain and computer 12

Art Unit: 2629

processes pose data to ensure that the virtual brain image corresponds exactly with the actual brain of the patient.).

Wendt et al fails to teach a virtual image memory configured to store, with respect to an operation composed of a sequence of operation steps, virtual images for explaining a content of each of the operation steps;

Jahn et al discloses a virtual image memory configured to store, with respect to an operation composed of a sequence of operation steps, virtual images for explaining a content of each of the operation steps (Figure 3 discloses virtual images 14 which contain information about how to perform an operation on the real operation object.);

Therefore it would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the head-mounted display taught by *Wendt et al* with teachings of *Jahn et al* in order to provide the user of the head-mounted display with virtual images that describe what the user is looking at.

Regarding claim 2, *Wendt et al* as modified above discloses the operation guiding system as set forth in claim 1, wherein each of the virtual images includes a line drawing outlining the real operation object and a visual information mark for explaining the content of each of the operation steps visually (Figure 3 of *Jahn et al* discloses that virtual images 14 are shown which give information about a portion of the operation object.).

Regarding claim 3, *Wendt et al* as modified above discloses the operation guiding system as set forth in claim 2, further including

a visual information mark input means which calls up one of the virtual images from said virtual image memory to modify and/or add the visual information mark (Figure 3 of *Jahn et al* discloses that virtual images 14 are shown which give information about a portion of the operation object.)..

Regarding claim 4, *Wendt et al* as modified above discloses the operation guiding system as set forth in claim 3, wherein each of the virtual images comprises a layer on which the line drawing is drawn and a layer on which the visual information mark is drawn (Figure 3 of *Jahn et al* discloses that virtual images 14 are shown with a line showing which part of the operation object they correspond to.).

Regarding claim 5, *Wendt et al* as modified above discloses the operation guiding system as set forth in claim 1, wherein said virtual image replay means memorizes a correspondence between each of the virtual images and each of the operation steps and has a function that calls up one of the virtual images corresponding to one of the operation steps specified by the operator (Figure 3 of *Jahn et al* discloses that virtual images 14 are called up based on the user looking at that specific portion of the operation object.).

Regarding claim 6, *Wendt et al* as modified above discloses the operation guiding system as set forth in claim 1, wherein said virtual image replay means memorizes a correspondence between each of the virtual images and each of the operation steps, said virtual image replay means having a function that replays the virtual images corresponding to the operation steps within a range specified by the operator and returns to a first virtual image in the range after a replay of the virtual

images (Paragraphs [0034] - [0037] of *Wendt et al* disclose that a recording means 14 can be used to record the augmented view and then play it back.).

Regarding claim 9, *Wendt et al* as modified above discloses the operation guiding system as set forth in claim 1, further including an image pickup means configured to take an image of the real operation object and a feature point extraction means configured to extract a feature point decided in advance with respect to the operation object, from the image taken by said image pickup means (Paragraphs [0047] and [0054] of *Wendt et al* disclose that a tracking means such as a tracking camera is used with optical markers to determine the pose of the head-mounted display with respect to the patient.);

said virtual image adjusting means changing a position and/or a dimension of each of the virtual images displayed on said display unit automatically such that a point of the virtual operation object which corresponds to the feature point extracted by said feature point extraction means will conform to the position of the feature point (Paragraphs [0028] and [0047]-[0048] of *Wendt et al* disclose that the head-mounted display adjusts the virtual image based on the pose information generated from the head-mounted display tracking means.).

Regarding claim 10, *Wendt et al* as modified above discloses the operation guiding system as set forth in claim 1, wherein said virtual image adjusting means includes a manual controller by which the operator can manually change a position and/or a dimension of each of the virtual images displayed on said display unit

(Paragraph [0037] of *Wendt et al* discloses a user interface 18 which allows the user to control the augmented view of the head-mounted display).

Regarding claim 11, *Wendt et al* as modified above discloses the operation guiding system as set forth in claim 10, further including a head tracking means configured to track a motion of the operator's head (Paragraphs [0046]–[0047] of *Wendt et al* disclose a head tracking means to determine the pose of the head-mounted display.);

said virtual image adjusting means correcting the position of each of the virtual images displayed on said display unit based on an output of said head tracking means (Paragraphs [0028] and [0048] of *Wendt et al* disclose that graphics subsystem 2-14 generates the augmented view based on the pose information generated by the head-mounted display orientation tracking means.).

3. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Wendt et al* and *Jahn et al* as applied to claim 1 above, and further in view of *Casby et al* (US 6,085,428).

Regarding claim 7, *Wendt et al* as modified above discloses the operation guiding system as set forth in claim 1, further including:

said virtual image replay means controlling the replay of the virtual images based on the operator's voice (Paragraph [0037] of *Wendt et al* discloses using voice control to control operation of the head-mounted display.).

Wendt et al as modified above fails to teach a voice input means for inputting an operator's voice and a voice recognition means configured to recognize the voice inputted using said voice input means;

Casby et al discloses a voice input means for inputting an operator's voice and a voice recognition means configured to recognize the voice inputted using said voice input means (Column 5, lines 17-28 disclose that speech module processor 58 receives a voice input and is programmed to allow access to the system based on the voice input.);

Therefore it would have been obvious to one of ordinary skill in the art at the time that the invention was made to further modify the head-mounted display system of *Wendt et al* with the voice control system taught by *Casby et al* in order to provide a hands-free way to control the head-mounted display system.

Regarding claim 8, *Wendt et al* as modified above discloses the operation guiding system as set forth in claim 1, further including a voice memory configured to store voice data for explaining the content of each of the operation steps and a voice output means configured to output the voice data (Column 4, lines 8-42 of *Casby et al* discloses voice messages stored in memory that are played to the user based through a speaker 12 describing an operation being performed.);

said virtual image replay means outputting the voice data to said voice output means in synchronization with a replay of the virtual images (Column 3, lines 18-21 and Column 4, lines 8-42 of *Casby et al* disclose that visual information is provided to the technician in combination with the voice data being provided to the technician.).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEPHEN A. BRAY whose telephone number is (571)270-7124. The examiner can normally be reached on Monday - Friday, 9:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, AMR AWAD can be reached on (571)272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/STEPHEN A BRAY/
Examiner, Art Unit 2629

/Amr Awad/
Supervisory Patent Examiner, Art Unit 2629

Application/Control Number: 10/517,487
Art Unit: 2629

Page 9

27 March 2009